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supply. Ovule and seed formation are associated with the closing activities of a period of growth, and any shortening of this period by a sharp differentiation of seasons should leave some impress upon ovule and seed development. This progressive simplification of the ovule deserves attention in the effort to discover its conditions; and the whole story, excepting the introductory chapter, is recorded in the history of gymnosperms.

In conclusion it may be emphasized that the gymnosperms, with their unparalleled perspective, are not only of importance in connection with the problems of the origin of seed plants and of angiosperms, but also in developing some conception of evolutionary progress quite apart from fluctuating variations or even mutations, and certainly beyond the control of any experimental work in genetics. It is obvious now that the phenomenon of progressive evolution in plants is not to be explained by any so-called "inherent tendency," but rather as a continuous response to progressive changes in the conditions for vegetative activity. When these conditions are analyzed, the response called orthogenesis in plants will become to some extent an index of the evolution of climate.

JOHN M. COULTER

UNIVERSITY OF CHICAGO

THE CONVOCATION WEEK MEETINGS OF SCIENTIFIC SOCIETIES

THE American Association for the Advancement of Science and the national scientific societies named below will meet at Columbus, Ohio, during convocation week, beginning on Monday, December 27, 1915:

American Association for the Advancement of Science.—President Dr. W. W. Campbell, Director Lick Observatory; retiring president, Dr. Charles W. Eliot, Harvard University; permanent secretary, Dr. L. O. Howard, Smithsonian

Institution, Washington, D. C.; general secretary, Mr. Henry Skinner, Academy of Natural Sciences, Logan Square, Philadelphia, Pa.; secretary of the council, Professor W. E. Henderson, Ohio State University.

Section A—Mathematics and Astronomy.—Vice-president, Professor A. O. Leuschner, University of California; secretary, Professor Forest R. Moulton, University of Chicago, Chicago, Ill.

Section B—Physics.—Vice-president, Professor Frederick Slate, University of California; secretary, Dr. W. J. Humphreys, U. S. Weather Bureau, Washington, D. C.

Section C—Chemistry.—Vice-president, Professor W. McPherson, Ohio State University; secretary, Dr. John Johnston, Geophysical Laboratory, Washington, D. C.

Section D—Mechanical Science and Engineering.—Vice-president, Bion J. Arnold, Chicago; secretary, Professor Arthur H. Blanchard, Columbia University, New York City.

Section E—Geology and Geography.—Vice-president, Professor C. S. Prosser, Ohio State University; secretary, Professor George F. Kay, University of Iowa.

Section F—Zoology.—Vice-president, Professor V. L. Kellogg, Stanford University; secretary, Professor Herbert V. Neal, Tufts College, Mass.

Section G—Botany.—Vice-president, Professor W. A. Setchell, University of California; secretary, Professor W. J. V. Osterhout, Harvard University, Cambridge, Mass.

Section H—Anthropology and Psychology.—Vice-president, Professor G. M. Stratton, University of California; secretary, Professor George Grant MacCurdy, Yale University; New Haven, Conn.

Section I—Social and Economic Science.—Vice-president, Geo. F. Kunz, New York; secretary, Seymour C. Loomis, 69 Church St., New Haven, Conn.

Section K—Physiology and Experimental Medicine.—Vice-president, Professor F. P. Gay, University of California; secretary, Professor C. E. A. Winslow, Yale University.

Section L—Education.—Vice-president, Professor E. P. Cubberley, Stanford University; secretary, Dr. Stuart A. Courtis, Detroit, Mich.

Section M—Agriculture.—Vice-president, Professor Eugene Davenport, University of Illinois; secretary, Dr. E. W. Allen, U. S. Department of Agriculture, Washington, D. C.

COLUMBUS

The American Physical Society.—December 28–30. President, Professor Ernest Merritt, Cornell University; secretary, Professor A. D. Cole, Ohio State University, Columbus, Ohio.

The American Federation of Teachers of the Mathematical and the Natural Sciences.—Secretary, Dr. Wm. A. Hedrick, McKinley Manual Training School, Washington, D. C.

The American Society of Naturalists.—December 30. President, Professor Frank R. Lillie, University of Chicago; secretary, Dr. Bradley M. Davis, University of Pennsylvania, Philadelphia, Pa.

The American Society of Zoologists.—December 28–30. President, Professor William A. Locy, Northwestern University; secretary, Dr. Caswell Grave, The Johns Hopkins University, Baltimore, Md.

The Entomological Society of America.—December 29–31. President, Professor Vernon L. Kellogg, Stanford University; secretary, Professor Alexander D. MacGillivray, 603 West Michigan Ave., Urbana, Ill.

The American Association of Economic Entomologists.—December 27–30. President, Professor Glen W. Herrick, Cornell University; secretary, A. F. Burgess, Melrose Highlands, Mass.

The Botanical Society of America.—President, Professor John M. Coulter, University of Chicago; secretary, H. H. Bartlett, 335 Packard St., Ann Arbor, Mich.

The American Phytopathological Society.—December 28–31. President, Professor H. H. Whetzel, Cornell University; secretary, Dr. C. L. Shear, U. S. Department of Agriculture, Washington, D. C.

American Nature-Study Society.—December 30–31. President, Dr. L. H. Bailey, Ithaca, N. Y.; secretary, Professor E. R. Downing, University of Chicago, Chicago, Ill.

School Garden Association of America.—December 29–30. President, Van Evrie Kilpatrick, 124 West 30th St., New York, N. Y.

American Association of Official Horticultural Inspectors.—December 28–29. Chairman, W. E. Rumsey, Morgantown, W. Va.; secretary, Professor J. G. Saunders, State Capitol, Madison, Wis.

The American Microscopical Society.—December 29. President, Professor Chas. A. Kofoid, University of California; secretary, T. W. Gallo-way, James Millikin University, Decatur, Ill.

American Mathematical Society (Chicago Section).—December 30 to January 1. Chairman, Professor E. J. Wilczynski, University of Chicago; secretary, Professor H. E. Slaughter, 5548 Kenwood Avenue, Chicago, Ill.

The Southern Society for Philosophy and Psychology.—December 28–30. President, Professor J. C. Barnes, Maryville College; secretary, Professor L. R. Geissler, University of Georgia, Athens, Ga.

Botanists of the Central States.—Will hold no separate meeting, but will present its papers in connection with Section G. President, Professor H. C. Cowles, University of Chicago; secretary, Dr. Edward A. Burt, Missouri Botanical Garden, St. Louis, Mo.

Society for Horticultural Science.—December 28–29. President, W. L. Howard; secretary, Professor C. P. Close, College Park, Maryland.

Association of Official Seed Analysts of North America.—December 28 and 29. President, W. L. Oswald; secretary, John P. Heylar, Agricultural Experiment Station, New Brunswick, N. J.

Society of Sigma XI.—December 28. President, Chas. S. Howe, Case School; secretary, Professor Henry B. Ward, University of Illinois, Urbana, Ill.

BOSTON

The American Physiological Society.—December 27–29. President, Professor W. B. Cannon, Harvard Medical School, Boston, Mass.; secretary, Professor Chas. W. Greene, University of Missouri, Columbia, Mo.

The American Society of Biological Chemists.—December 27–30. President, Professor Walter Jones, The Johns Hopkins University; secretary, Professor Philip A. Shaffer, Washington University Medical School, St. Louis, Mo.

The Society of Pharmacology and Experimental Therapeutics.—December 27–29. President, Dr. Torald Sollmann, Western Reserve University Medical School, Cleveland, Ohio; secretary, Dr. John Auer, Rockefeller Institute for Medical Research, New York City.

WASHINGTON, D. C.

The Geological Society of America.—December 28–30. President, Professor A. P. Coleman, University of Toronto; secretary, Dr. Edmund Otis Hovey, American Museum of Natural History, New York City.

The Association of American Geographers.—December 30–January 1. President, Professor R. E. Dodge, Teachers College, Columbia University;

secretary, Dr. Isaiah Bowman, Broadway and 156th St., New York City.

The Paleontological Society.—December 29–30. President, Dr. E. O. Ulrich, U. S. Geological Survey; secretary, Dr. R. S. Bassler, U. S. National Museum, Washington, D. C.

The American Anthropological Association.—December 27–31. President, F. W. Hodge, Bureau of American Ethnology; secretary, Professor George Grant MacCurdy, Yale University, New Haven, Conn.

The American Folk-Lore Society.—Convocation Week. President, Dr. P. E. Goddard, American Museum of Natural History, New York City; secretary, Dr. Charles Peabody, 197 Brattle St., Cambridge, Mass.

The American Economic Association.—December 28–30. President, Professor W. F. Willcox, Cornell University; secretary, Professor Allyn A. Young, Cornell University, Ithaca, N. Y.

The American Sociological Society.—December 28–31. President, Professor E. A. Ross, University of Wisconsin; secretary, Professor Scott E. W. Bedford, University of Chicago, Chicago, Ill.

NEW HAVEN

The Association of American Anatomists.—December 28–30. President, Professor G. Carl Huber, University of Michigan; secretary, Dr. Charles R. Stockard, Cornell University Medical School, New York City.

URBANA

The Society of American Bacteriologists.—December 28–30. President, Dr. D. H. Bergey, University of Pennsylvania; secretary, Dr. A. Parker Hitchens, Glenolden, Pa.

NEW YORK CITY

The American Mathematical Society.—December 27–28. President, Professor E. W. Brown, Yale University; secretary, Professor F. N. Cole, 501 West 116th St., New York City.

CHICAGO

The American Psychological Association.—December 28–30. President, Professor John B. Watson, The Johns Hopkins University; secretary, Professor R. M. Ogden, University of Kansas, Lawrence, Kansas.

PHILADELPHIA

The American Philosophical Association.—December 28–30. President, Professor A. C. Armstrong, Wesleyan University; secretary, Professor E. G. Spaulding, Princeton, N. J.

SCIENTIFIC NOTES AND NEWS

THE Royal medals of the Royal Society have been awarded to Sir Joseph Larmor, F.R.S., for his contributions to mathematical and physical science, and to Dr. W. H. R. Rivers, F.R.S., for his contributions to ethnography and ethnology. The Copley medal is awarded to Professor Ivan Petrovitch Pavlov, for his investigations in the physiology of digestion and of the higher centers of the nervous system; the Davy medal to Professor Paul Sabatier, for his researches on contact action and the application of finely-divided metals as catalytic agents, and the Hughes medal to Professor Paul Langevin, for his contributions to electrical science.

THE Symons Memorial gold medal of the Royal Meteorological Society has been awarded to Dr. C. A. Angot, director of the French Meteorological Bureau.

DR. HENRY SHOEMAKER CONARD, professor of botany at Grinnell College, has been appointed visiting lecturer on botany at Harvard University for the second half of the academic year.

DR. W. A. ORTON and Dr. C. L. Shear, of the United States Department of Agriculture, have been appointed delegates from the American Phytopathological Society to the Second Pan-American Congress meeting in Washington, December 27 to January 8.

STAFF-SURGEON G. M. LEVICK has been specially promoted to the rank of fleet surgeon in the British navy for his services with the British antarctic expedition in 1910.

DR. WILFRID T. GRENFELL, known for his work in Labrador, has accepted an invitation to take charge of a division of a hospital unit sent to France by Harvard University. He will return in the spring to Labrador.

DR. WILLIAM H. HEATH, of Buffalo, has been appointed executive medical adviser and sanitarian to the king of Siam. His duty will be to establish modern sanitary conditions in that country.

H. H. CLAYTON, in charge of the forecast department for the Argentine Weather Bureau, is returning to this country for a visit.